

CLAIMS

1. Granulate that consists of fragments of a sintered body (21, 21') that is sintered from a crushed blow-molded glass, with a number of inclusions of at least one active substance (17, 27) on the broken surfaces of granulate (21, 21'), which active substance (17, 27) is embedded as a grain in sintered body (21, 21') and can interact with the latter upon contact with toxins, in particular with toxins that are suspended or dissolved in water.
2. Granulate according to claim 1, produced by mixing granular active substance (17, 27) with the crushed blow-molded glass, then sintering one layer of this mixture and then breaking the sintered layer.
3. Granulate according to claim 1 or 2, characterized in that the active substance, in particular metallic iron, is present primarily in a grain size of between 1 micrometer and 2000 micrometers, preferably between 10 micrometers and 200 micrometers.
4. Granulate according to one of claims 1 to 3, wherein the active substance iron (17) is in metallic form.
5. Granulate according to claim 4, characterized by iron as an active substance and an average grain size of the iron of between 20 and 1000 micrometers, preferably between 20 and 500 micrometers, especially preferably between 40 and 400 micrometers, in particular between 50 and 200 micrometers.

6. Granulate according to one of claims 4 or 5, characterized by a content of fine-grained, metallic iron of between 0.5 and 8% by weight, preferably between 1 and 4% by weight.
7. Granulate according to one of claims 1 to 6, wherein the inclusions are fine-grained and are distributed homogeneously.
8. Granulate according to one of claims 1 to 3, wherein sintered body (21, 21') has cavities (13, 15, 15').
9. Granulate according to one of claims 1 to 8, wherein the glass is obtained from glass wastes.
10. Granulate according to one of claims 1 to 9, wherein sintered body (21) is foamed.
11. Granulate according to claim 10, wherein the foaming is achieved with a foaming agent that has a reductive effect during foaming.
12. Granulate according to one of claims 10 or 11, wherein granulate (21) that consists of foam glass (11) is broken, and its outer surface is formed essentially by foam glass pores (13, 15) that are broken up by several concave partial areas of pore surfaces (19).
13. Granulate according to claim 12, wherein foam glass (11) has macropores (13) and micropores (15) in walls (12) between macropores (13), and granulate (21) has closed micropores (15).
14. Granulate according to one of claims 10 to 13, wherein granulate (21) that consists of closed-cell foam glass (11) is broken.

15. Granulate according to one of claims 10 to 14, characterized by a maximum pore size of foam glass (11) that corresponds to at least the grain size of foam glass granulate (21).
16. Granulate according to one of claims 10 to 15, characterized by a compressive strength of the foam glass fragments of more than 2 N/mm², preferably of more than 4 N/mm², especially preferably of more than 6 N/mm².
17. Granulate according to one of the preceding claims, characterized by a water-soluble additive (27) as an active substance in the form of grains (27) embedded in foam glass (11).
18. Granulate according to claim 17, wherein magnesium oxide or magnesium hydroxide is embedded as a water-soluble additive (27) in the glass matrix of foam glass (11).
19. Granulate according to one of the preceding claims, wherein iron particles (17) are present as chips in the granulate.
20. Granulate according to claim 19, wherein iron particles (17) that consist of stainless steel are present.
21. Granulate according to one of the preceding claims, wherein grains (27) of activated carbon are present as active substances.
22. Granulate according to one of the preceding claims, wherein grains (27) of zeolites are present as active substances.

23. Granulate according to one of claims 1 to 22, wherein in addition, one or more of the following substances are present in the granulate: aluminum powder, magnesium powder.
24. Granulate according to one of claims 1 to 23, wherein a halogen compound, an oxide, hydroxide, sulfate, carbonate or a phosphate is present as an active substance, especially such a one of sodium, potassium, calcium, magnesium, or iron.
25. Granulate according to one of claims 1 to 24, in particular for water purification, characterized by a specific weight of water-filled granulate of $1000 \pm 200 \text{ kg/m}^3$.
26. Granulate according to one of claims 1 to 25, characterized by a metallic iron portion of more than 6% by weight of dry weight, preferably between 6 and 20, and especially preferably between 7 and 10% by weight.
27. Granulate according to claim 8, wherein the foam glass that consists of a powder mixture is sintered, which powder mixture contains glass powder, a foaming agent that forms gas under the action of heat, and a fine-grained active substance, in particular metallic iron powder.
28. Granulate according to one of claims 1 to 27, characterized by a common grain size of all fragments between dust and 64 mm, preferably between 1 and 32 mm.
29. Granulate according to claim 28, in particular for water renovation, characterized by a grain size of between 2 and 8 mm, preferably between 2 and 4 mm.

30. Bulk material with a granulate according to one of claims 1 to 28,
characterized by a grading curve, in particular a Fuller grading curve with the
grain sizes, e.g., of between dust and 64 mm, preferably between 1 mm and
32 mm.
31. Process for the production of a sintered glass granulate, in which glass
powder that consists of blow-molded glass, in particular glass wastes, is
produced; the glass powder and a granular active substance are mixed with
one another; which active substance can interact with the latter after a
temporary heating to about 900 degrees upon contact with toxins, in
particular toxins that are suspended or dissolved in water, and the thus
resulting powder mixture is heated in a furnace, and the thus sintered glass
then is cooled and is broken into fragments.
32. Process according to claim 31, wherein the glass powder and the active
substance are mixed with water, and the moist mixture is sintered.
33. Process according to claim 31 for the production of foam glass, in which the
glass powder and a fine-grained foaming agent that forms gas under the
action of heat and the granular active substance are homogeneously mixed
with one another, and the mixture is foamed in a furnace.
34. Process according to one of claims 31 to 33, wherein the active substance is
an iron powder whose average grain size is preferably between 20 and 1000
micrometers, especially preferably between 20 and 500 micrometers, quite
especially preferably between 40 and 400 micrometers, or else between 50
and 200 micrometers.

35. Process according to one of claims 32 to 34, wherein the foam glass production is carried out under reductive conditions.
36. Use of the granulate according to one of claims 1 to 29 or the bulk material according to claim 30 as an additive for the production of an inorganically- or organically-bonded construction material, in particular foam-glass concrete.
37. Use of the unfoamed granulate according to one of claims 1 to 9 and 17 to 29 as an additive for the production of an inorganically- or organically-bonded construction material, in particular sintered-glass concrete.
38. Use of the granulate according to one of claims 10 to 16 or of the bulk material according to claim 30 in loose feedstock, e.g., for perimeter insulations, drainage, earth retaining walls or roads.
39. Use of the foamed granulate according to one of claims 10 to 16 or the bulk material according to claim 30 in an environmentally-sensitive area, in particular in contact with ground water, surface water or drinking water, e.g., in hydraulic engineering, in underground structures and in building construction.
40. Use of the unfoamed granulate according to one of claims 1 to 9 and 17 to 29 in an environmentally-sensitive area, in particular in contact with ground water, surface water or drinking water, e.g., in hydraulic engineering, in underground structures and in building construction.
41. Use of the granulate according to one of claims 1 to 29 or of the bulk material according to claim 30 for waste water purification in a multi-stage industrial or municipal sewage treatment plant.

42. Use according to claim 41, in which the granulate in the last stage is used to filter out floating particles and/or to bind dissolved toxins.
43. Use of the granulate according to one of claims 1 to 29 or of the bulk material according to claim 30 for drinking water renovation, storm water renovation or for preparing street waste water.
44. Use of metallic iron for destroying or binding endocrine toxins in waste water or drinking water.